STUDIES ON THE BACTERIAL FLORA OF THE MOUTH AND NOSE OF THE NORMAL HORSE

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The object of this work was to determine the various species of bacteria which are normally present on the mucous membranes of the mouth and nose of the horse. The value of such a study becomes apparent when one considers that horses are subject to many diseases of unknown or doubtful etiology, such as some forms of rhinitis, laryngitis, vesicular stomatitis, etc., and that an endeavor to determine the causative factors in such diseases will invariably involve the elimination of those organisms that are normally present.

Methods. The horses used in this investigation were mares and geldings with perfectly sound and healthy mucous membranes. They included express horses, University Farm horses, and a few horses in the Veterinary Hospital.

Cultures were taken by swabbing, with sterile swabs, the mucous membranes of the hard and soft palates, tongue, cheek, gums, floor of the mouth, and nasal cavity. The swab cultures were used to inoculate tubes of melted agar, which were plated out in the regular manner. Pure cultures were obtained by "fishing" from the colonies thus grown on the plates. Each culture was subjected to the usual cultural and morphological tests, and the determination of species was aided by the use of Chester's "Manual of Determinative Bacteriology," and Matzuschita's "Bakteriologische Diagnostik."

Results. The various bacteria obtained are recorded in the following table:

Organisms present in the mouth and nose of the horse

NUMBER OF ORGANISM	NAME OF ORGANISM	MOUTH—PER CENT OF HORSES IN WHICH IT WAS FOUND	NOSE—PER CENT OF HORSES IN WHICH IT WAS FOUND
1	*B. buccalis*	4	
2	*B. capillaceous*	4	
3	*B. cereus*	4	
4	*B. cloacae*	8	
5	*B. coccineus*	8	
6	*B. coli*	12	
7	*B. cuticularis*		4
8	*B. detrudens*	4	
9	*B. gangraenae*	32	4
10	*B. geminus*	4	
11	*B. liodermos*	4	
12	*B. liquifaciens*	8	
13	*B. magnus*	12	
14	*B. megatherium*	12	12
15	*B. mesentericus*	32	12
16	*B. morbificans*		24
17	*B. prausnitzii*	28	4
18	*B. stellatus*	32	60
19	*B. subtilis*	24	16
20	*B. viscosus*	8	
21	*B. vulgatus*	12	
22	*Mic. aethebius*		4
23	*Mic. aurantiacus*	8	
24	*Mic. citreus*		28
25	*Mic. citreus-granulatus*	8	
26	*Mic. cremoides*	4	
27	*Mic. flavus*	8	
28	*Mic. orbiculatus*	24	20
29	*Mic. ovalis*		8
30	*Mic. pyogenes-albus*	12	12
31	*Mic. simplex*	4	8
32	*Mic. tetragenus*	4	
33	*Molds*	48	64
34	*Ps. pyocyanea*	8	4
35	*Sarcina aurantiaca*	12	12
36	*Sarcina flava*		8
37	*Sarcina lutea*	24	24
38	*Staph. epidermidis albus*	16	16
39	*Streptothrix chromogena*	32	88
40	*Strep. pyogenes*	8	4
41	*Strep. vermiformis*	8	4
42	Not determined (a)	8	

NUMBER OF ORGANISM	NAME OF ORGANISM	MOUTH—PER CENT OF HORSES IN WHICH IT WAS FOUND	NOSE—PER CENT OF HORSES IN WHICH IT WAS FOUND
43	Not determined (b)	8	
44	Not determined (c)	4	
45	Not determined (d)	4	
46	Not determined (e)	4	
47	Not determined (f)	4	
48	Not determined (g)	12	
49	Not determined (h)	8	
50	Not determined (1)		8
51	Not determined (2)		16
52	Not determined (3)		16
53	Not determined (4)		8

It will be observed that twelve organisms are "not determined." i.e., their cultural characteristics did not correspond to those of any species given by Chester or Matzuschita. Most of these bacteria were large, rod-shaped, spore bearers, all but one being Gram positive. They differed but slightly from some of our common saprophytes. To give such forms a new name, and to place them as entirely new species would be entirely unwarranted. They might better be considered, at present, as new strains; the result perhaps, of a slightly different environment.

CONCLUSIONS

1. The nose and mouth of the normal horse harbor a large flora of micro-organisms.

2. The great majority of these organisms are harmless saprophytes.

3. Occasionally present are a few bacteria which may become pathogenic under certain conditions.